

Karl Marx

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Part III: The Production of Absolute Surplus-Value

Chapter Nine

The Rate of Surplus-Value



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The Rate of Surplus-Value

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SECTION 1.

THE DEGREE OF EXPLOITATION OF LABOUR-POWER

The surplus-value generated in the process of production by C, the capital advanced, or in other words, the self-expansion of the value of the capital C, presents itself for our consideration, in the first place, as a surplus, as the amount by which the value of the product exceeds the value of its constituent elements.

The capital C is made up of two components, one, the sum of money c laid out upon the means of production, and the other, the sum of money v expended upon the labour-power; c represents the portion that has become constant capital, and v the portion that has become variable capital. At first then, $C = c + v$: for example, if £500 is the capital advanced, its components may be such that the £500 = £410 const. + £90 var. When the process of production is finished, we get a commodity whose

value = $(c + v) + s$, where s is the surplus-value; or taking our former figures, the value of this commodity may be (£410 const. + £90 var.) + £90 surpl. The original capital has now changed from C to C' , from £500 to £590. The difference is s or a surplusvalue of £90. Since the value of the constituent elements of the product is equal to the value of the advanced capital, it is mere tautology to say, that the excess of the value of the product over the value of its constituent elements, is equal to the expansion of the capital advanced or to the surplus-value produced.

Nevertheless, we must examine this tautology a little more closely. The two things compared are, the value of the product and the value of its constituents consumed in the process of production. Now we have seen how that portion of the constant capital which consists of the instruments of labour, transfers to the production only a fraction of its value, while the remainder of that value continues. to reside in those instruments. Since this remainder plays no part in the formation of value, we may at present leave it on one side. To introduce it into the calculation would make no difference. For instance, taking our former example, $c = £410$: suppose this sum to consist of £312 value of raw material, £44 value of auxiliary material, and £54 value of the machinery worn away in the process; and suppose that the total value of the machinery employed is £1,054. Out of this latter sum, then, we reckon as advanced for the purpose of turning out the product, the sum of £54 alone, which the machinery loses by wear and tear in the process; for this is all it parts with to the product. Now if we also reckon the remaining £1,000, which still continues in the machinery, as transferred to the product, we ought also to reckon it as part of the value advanced, and thus make it appear on both sides of our calculation. [1] We should, in this way, get £1,500 on one side and £1,590 on the other. The difference of these two sums, or the surplus-value, would still be £90. Throughout this Book therefore, by constant capital advanced for the production of value, we always mean, unless the context is repugnant thereto, the value of the means of production actually consumed in the process, and that value alone.

This being so, let us return to the formula $C = c + v$, which we saw was transformed into $C' = (c + v) + s$, C becoming C' . We know that the value of the constant capital is transferred to, and merely re-appears in the product. The new value actually created in the process, the value produced, or value-product, is therefore not the same as the value of the product; it is not, as it would at first sight appear $(c + v) + s$ or £410 const. + £90 var. + £90 surpl.; but $v + s$ or £90 var. + £90 surpl., not £590 but £180. If $c = 0$, or in other words, if there were branches of industry in which the capitalist could dispense with all means of production made by previous labour, whether they be raw material, auxiliary material, or instruments of labour, employing only labour-power and materials supplied by Nature, in that case, there would be no constant capital to transfer to the product. This component of the value of the product, *i.e.*, the £410 in our example, would be eliminated, but the

sum of £180, the amount of new value created, or the value produced, which contains £90 of surplus-value, would remain just as great as if c represented the highest value imaginable. We should have $C = (0 + v) = v$ or C' the expanded capital $= v + s$ and therefore $C' - C = s$ as before. On the other hand, if $s = 0$, or in other words, if the labour-power, whose value is advanced in the form of variable capital, were to produce only its equivalent, we should have $C = c + v$ or C' the value of the product — $(c + v) + 0$ or $C = C'$. The capital advanced would, in this case, not have expanded its value.

From what has gone before, we know that surplus-value is purely the result of a variation in the value of v , of that portion of the capital which is transformed into labour-power; consequently, $v + s = v + v$, or v plus an increment of v . But the fact that it is v alone that varies, and the conditions of that variation, are obscured by the circumstance that in consequence of the increase in the variable component of the capital, there is also an increase in the sum total of the advanced capital. It was originally £500 and becomes £590. Therefore in order that our investigation may lead to accurate results, we must make abstraction from that portion of the value of the product, in which constant capital alone appears, and consequently must equate the constant capital to zero or make $c = 0$. This is merely an application of a mathematical rule, employed whenever we operate with constant and variable magnitudes, related to each other by the symbols of addition and subtraction only.

A further difficulty is caused by the original form of the variable capital. In our example, $C' = £410 \text{ const.} + £90 \text{ var.} + £90 \text{ surpl.}$; but £90 is a given and therefore a constant quantity; hence it appears absurd to treat it as variable. But in fact, the term £90 var. is here merely a symbol to show that this value undergoes a process. The portion of the capital invested in the purchase of labour-power is a definite quantity of materialised labour, a constant value like the value of the labour-power purchased. But in the process of production the place of the £90 is taken by the labour-power in action, dead labour is replaced by living labour, something stagnant by something flowing, a constant by a variable. The result is the reproduction of v plus an increment of v . From the point of view then of capitalist production, the whole process appears as the spontaneous variation of the originally constant value, which is transformed into labour-power. Both the process and its result, appear to be owing to this value. If, therefore, such expressions as "£90 variable capital," or "so much self-expanding value", appear contradictory, this is only because they bring to the surface a contradiction immanent in capitalist production.

At first sight it appears a strange proceeding, to equate the constant capital to zero. Yet it is what we do every day. If, for example, we wish to calculate the amount of England's profits from the cotton industry, we first of all deduct the sums paid for

cotton to the United States, India, Egypt and other countries; in other words, the value of the capital that merely re-appears in the value of the product, is put = 0.

Of course the ratio of surplus-value not only to that portion of the capital from which it immediately springs, and whose change of value it represents, but also -to the sum total of the capital advanced is economically of very great importance. We shall, therefore, in the third book, treat of this ratio exhaustively. In order to enable one portion of a capital to expand its value by being converted into labour-power, it is necessary that another portion be converted into means of production. In order that variable capital may perform its function, constant capital must be advanced in proper proportion, a proportion given by the special technical conditions of each labour-process. The circumstance, however, that retorts and other vessels, are necessary to a chemical process, does not compel the chemist to notice them in the result of his analysis. If we look at the means of production, in their relation to the creation of value, and to the variation in the quantity of value, apart from anything else, they appear simply as the material in which labour-power, the value-creator, incorporates itself. Neither the nature, nor the value of this material is of any importance. The only requisite is that there be a sufficient supply to absorb the labour expended in the process of production. That supply once given, the material may rise or fall in value, or even be, as land and the sea, without any value in itself; but this will have no influence on the creation of value or on the variation in the quantity of value. [2]

In the first place then we equate the constant capital to zero. The capital advanced is consequently reduced from $c + v$ to v , and instead of the value of the product $(c + v) + s$ we have now the value produced $(v + s)$. Given the new value produced = £180, which sum consequently represents the whole labour expended during the process, then subtracting from it £90 the value of the variable capital, we have remaining £90, the amount of the surplus-value. This sum of £90 or s expresses the absolute quantity of surplus-value produced. The relative quantity produced, or the increase per cent of the variable capital, is determined, it is plain, by the ratio of the surplus-value to the variable capital, or is expressed by s/v . In our example this ratio is $90/90$, which gives an increase of 100%. This relative increase in the value of the variable capital, or the relative magnitude of the surplus-value, I call, "The rate of surplus-value." [3]

We have seen that the labourer, during one portion of the labour-process, produces only the value of his labour-power, that is, the value of his means of subsistence. Now since his work forms part of a system, based on the social division of labour, he does not directly produce the actual necessities which he himself consumes; he produces instead a particular commodity, yarn for example, whose value is equal to the value of those necessities or of the money with which they can be bought. The

portion of his day's labour devoted to this purpose, will be greater or less, in proportion to the value of the necessities that he daily requires on an average, or, what amounts to the same thing, in proportion to the labour-time required on an average to produce them. If the value of those necessities represent on an average the expenditure of six hours' labour, the workman must on an average work for six hours to produce that value. If instead of working for the capitalist, he worked independently on his own account, he would, other things being equal, still be obliged to labour for the same number of hours, in order to produce the value of his labour-power, and thereby to gain the means of subsistence necessary for his conservation or continued reproduction. But as we have seen, during that portion of his day's labour in which he produces the value of his labour-power, say three shillings, he produces only an equivalent for the value of his labour-power already advanced [4] by the capitalist; the new value created only replaces the variable capital advanced. It is owing to this fact, that the production of the new value of three shillings takes the semblance of a mere reproduction. That portion of the working-day, then, during which this reproduction takes place, I call "*necessary*" labour-time, and the labour expended during that time I call "*necessary*" labour [5] Necessary, as regards the labourer, because independent of the particular . 2 social form of his labour; necessary, as regards capital, and the world of capitalists, because on the continued existence of the labourer depends their existence also.

During the second period of the labour-process, that in which his labour is no longer necessary labour, the workman, it is true, labours, expends labour-power; but his labour, being no longer necessary labour, he creates no value for himself. He creates surplus-value which, for the capitalist, has all the charms of a creation out of nothing. This portion of the working-day, I name surplus labour-time, and to the labour expended during that time, I give the name of surplus-labour. It is every bit as important, for a correct understanding of surplus-value, to conceive it as a mere congelation of surplus labour-time, as nothing but materialised surplus-labour, as it is, for a proper comprehension of value, to conceive it as a mere congelation of so many hours of labour, as nothing but materialised labour. The essential difference between the various economic forms of society, between, for instance, a society based on slave-labour, and one based on wage-labour, lies only in the mode in which this surplus-labour is in each case extracted from the actual producer, the labourer. [6]

Since, on the one hand, the values of the variable capital and of the labour-power purchased by that capital are equal, and the value of this labour-power determines the necessary portion of the working-day; and since, on the other hand, the surplus-value is determined by the surplus portion of the working-day, it follows that surplus-value bears the same ratio to variable capital, that surplus-labour does to necessary labour, or in other words, the rate of surplus-value

$$\frac{s}{v} = \frac{\text{surplus-labour}}{\text{necessary labour}}$$

Both ratios, s/v and surplus-labour/necessary-labour, express the same thing in different ways; in the one case by reference to materialised, incorporated labour, in the other by reference to living, fluent labour.

The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the labourer by the capitalist. [7]

We assumed in our example, that the value of the product £410 const. + £90 var. + £90 surpl., and that the capital advanced = £500. Since the surplus-value = £90, and the advanced capital = £500, we should, according to the usual way of reckoning, get as the rate of surplus-value (generally confounded with rate of profits) 18%, a rate so low as possibly to cause a pleasant surprise to Mr. Carey and other harmonisers. But in truth, the rate of surplus-value is not equal to s/C or $s/C+v$: thus it is not 90/500 but 90/500 or 100%, which is more than five times the apparent degree of exploitation. Although, in the case we have supposed, we are ignorant of the actual length of the working-day, and of the duration in days or weeks of the labour-process, as also of the number of labourers employed, yet the rate of surplus-value s/v accurately discloses to us, by means of its equivalent expression, surplus-labour/necessary labour the relation between the two parts of the working-day. This relation is here one of equality, the rate being 100%. Hence, it is plain, the labourer, in our example, works one half of the day for himself, the other half for the capitalist.

The method of calculating the rate of surplus-value is therefore, shortly, as follows. We take the total value of the product and put the constant capital which merely re-appears in it, equal to zero. What remains, is the only value that has, in the process of producing the commodity, been actually created. If the amount of surplus-value be given, we have only to deduct it from this remainder, to find the variable capital. And *vice versa*, if the latter be given, and we require to find the surplus-value. If both be given, we have only to perform the concluding operation, viz., to calculate s/v , the ratio of the surplus-value to the v variable capital.

Though the method is so simple, yet it may not be amiss, by means of a few examples, to exercise the reader in the application of the novel principles underlying it.

First we will take the case of a spinning mill containing 10,000 mule spindles, spinning No. 32 yarn from American cotton, and producing 1 lb. of yarn weekly per spindle. We assume the waste to be 6%: under these circumstances 10,600 lbs. of cotton are consumed weekly, of which 600 lbs. go to waste. The price of the cotton in April, 1871, was 7 3/4d. per lb.; the raw material therefore costs in round numbers £342. The 10,000 spindles, including preparation-machinery, and motive power, cost, we will assume, £1 per spindle, amounting to a total of £10,000. The wear and tear we put at 10%, or £1,000 yearly = £20 weekly. The rent of the building we suppose to be £300 a year, or £6 a week. Coal consumed (for 100 horse-power indicated, at 4 lbs. of coal per horse-power per hour during 60 hours, and inclusive of that consumed in heating the mill), 11 tons a week at 8s. 6 d. a ton, amounts to about £4 1/2 a week: gas, £1 a week, oil, &c., £4 1/2 a week. Total cost of the above auxiliary materials, £10 weekly. Therefore the constant portion of the value of the week's product is £378. Wages amount to £52 a week. The price of the yarn is 12 1/4d. per lb. which gives for the value of 10,000 lbs. the sum of £510. The surplus-value is therefore in this case £510 - £430 = £80. We put the constant part of the value of the product = 0, as it plays no part in the creation of value. There remains £132 as the weekly value created, which = £52 var. + £80 surpl. The rate of surplus-value is therefore $80/52 = 153 \frac{11}{13}\%$. In a working-day of 10 hours with average labour the result is: necessary labour = $3 \frac{31}{33}$ hours, and surplus-labour = $6 \frac{2}{33}$. [8]

One more example. Jacob gives the following calculation for the year 1815. Owing to the previous adjustment of several items it is very imperfect; nevertheless for our purpose it is sufficient. In it he assumes the price of wheat to be 8s. a quarter, and the average yield per acre to be 22 bushels.

VALUE PRODUCED PER ACRE			
Seed	£1 9s. 0d.	Tithes, Rates, and taxes,	£1 1s. 0d.
Manure	£2 10s. 0d.	Rent	£1 8s. 0d.
Wages	£3 10s. 0d.	Farmer's Profit and Interest	£1 2s. 0d.
TOTAL	£7 9s. 0d.	TOTAL	£3 11s 0d.

Assuming that the price of the product is the same as its value, we here find the surplus-value distributed under the various heads of profit, interest, rent, &c. We have. nothing to do with these in detail; we simply add them together, and the sum is a surplus-value of £3 11s. 0d. The sum of £3 19s. 0d., paid for seed and manure, is constant capital, and we put it equal to zero. There is left the sum of £3 10s. 0d., which is the variable capital advanced: and we see that a new value of £3 10s. 0d +

£3 11s. 0d. has been produced in its place. Therefore $s/v = £3\ 11s.\ 0d. / £3\ 10s.\ 0d.$, giving a rate of surplus-value of more than 100%. The labourer employs more than one half of his working-day in producing the surplus-value, which different persons, under different pretexts, share amongst themselves. [9]

SECTION 2.

THE REPRESENTATION OF THE COMPONENTS OF THE VALUE OF THE PRODUCT BY CORRESPONDING PROPORTIONAL PARTS OF THE PRODUCT ITSELF

Let us now return to the example by which we were shown how the capitalist converts money into capital.

The product of a working-day of 12 hours is 20 lbs. of yarn, having a value of 30s. No less than 8/10ths of this value, or 24s., is due to mere re-appearance in it, of the value of the means of production (20 lbs. of cotton, value 20s., and spindle worn away, 4s.): it is therefore constant capital. The remaining 2/10ths or 6s. is the new value created during the spinning process: of this one half replaces the value of the day's labour-power, or the variable capital, the remaining half constitutes a surplus-value of 3s. The total value then of the 20 lbs. of yarn is made up as follows:

30s. value of yarn = 24s. const. + 3s. var. + 3s. surpl.

Since the whole of this value is contained in the 20 lbs. of yarn produced, it follows that the various component parts of this value, can be represented as being contained respectively in corresponding parts of the product.

If the value of 30s. is contained in 20 lbs. of yarn, then 8/10ths of this value, or the 24s. that form its constant part, is contained in 8/10ths of the product or in 16 lbs. of yarn. Of the latter 13 1/3 lbs. represent the value of the raw material, the 20s. worth of cotton spun, and 2 2/3 lbs. represent the 4s. worth of spindle, &c., worn away in the process.

Hence the whole of the cotton used up in spinning the 20 lbs. of yarn, is represented by 13 1/3 lbs. of yarn. This latter weight of yarn contains, it is true, by weight, no more than 13 1/3 lbs. of cotton, worth 13 1/3 shillings; but the 6 2/3 shillings additional value contained in it, are the equivalent for the cotton consumed in spinning the remaining 6 2/3 lbs. of yarn. The effect is the same as if

these $6\frac{2}{3}$ lbs. of yarn contained no cotton at all, and the whole 20 lbs. of cotton were concentrated in the $13\frac{1}{3}$ lbs. of yarn. The latter weight, on the other hand, does not contain an atom either of the value of the auxiliary materials and implements, or of the value newly created in the process.

In the same way, the $2\frac{2}{3}$ lbs. of yarn, in which the 4s., the remainder of the constant capital, is embodied, represents nothing but the value of the auxiliary materials and instruments of labour consumed in producing the 20 lbs. of yarn.

We have, therefore, arrived at this result: although eight-tenths of the product, or 16 lbs. of yarn, is, in its character of an article of utility, just as much the fabric of the spinner's labour, as the remainder of the same product, yet when viewed in this connexion, it does not contain, and has not absorbed any labour expended during the process of spinning. It is just as if the cotton had converted itself into yarn, without help; as if the shape it had assumed was mere trickery and deceit: for so soon as our capitalist sells it for 24s., and with the money replaces his means of production, it becomes evident that this 16 lbs. of yarn is nothing more than so much cotton and spindle-waste in disguise.

On the other hand, the remaining $\frac{2}{10}$ ths of the product, or 4 lbs. of yarn, represent nothing but the new value of 6s., created during the 12 hours' spinning process. All the value transferred to those 4 lbs., from the raw material and instruments of labour consumed, was, so to say, intercepted in order to be incorporated in the 16 lbs. first spun. In this case, it is as if the spinner had spun 4 lbs. of yarn out of air, or, as if he had spun them with the aid of cotton and spindles, that, being the spontaneous gift of Nature, transferred no value to the product.

Of this 4 lbs. of yarn, in which the whole of the value newly created during the process, is condensed, one half represents the equivalent for the value of the labour consumed, or the 3s. variable capital, the other half represents the 3s. surplus-value.

Since 12 working-hours of the spinner are embodied in 6s., it follows that in yarn of the value of 30s., there must be embodied 60 working-hours. And this quantity of labour-time does in fact exist in the 20 lbs. of yarn; for in $\frac{8}{10}$ ths or 16 lbs. there are materialised the 48 hours of 10 labour expended, before the commencement of the spinning process, on the means of production; and in the remaining $\frac{2}{10}$ ths or 4 lbs. there are materialised the 12 hours' work done during the process itself.

On a former page we saw that the value of the yarn is equal to the sum of the new value created during the production of that yarn plus the value previously existing in the means of production.

It has now been shown how the various component parts of the value of the product, parts that differ functionally from each other, may be represented by corresponding proportional parts of the product itself.

To split up in this manner the product into different parts, of which one represents only the labour previously spent on the means of production, or the constant capital, another, only the necessary labour spent during the process of production, or the variable capital, and another and last part, only the surplus-labour expended during the same process, or the surplus-value; to do this, is, as will be seen later on from its application to complicated and hitherto unsolved problems, no less important than it is simple.

In the preceding investigation we have treated the total product as the final result, ready for use, of a working-day of 12 hours. We can however follow this total product through all the stages of its production; and in this way we shall arrive at the same result as before, if we represent the partial products, given off at the different stages, as functionally different parts of the final or total product.

The spinner produces in 12 hours 20 lbs. of yarn, or in 1 hour $1\frac{2}{3}$ lbs; consequently he produces in 8 hours $13\frac{2}{3}$ lbs., or a partial product equal in value to all the cotton that is spun in a whole day. In like manner the partial product of the next period of 1 hour and 36 minutes, is $2\frac{2}{3}$ lbs. of yarn: this represents the value of the instruments of labour that are consumed in 12 hours. In the following hour and 12 minutes, the spinner produces 2 lbs. of yarn worth 3 shillings, a value equal to the whole value he creates in his 6 hours' necessary labour. Finally, in the last hour and 12 minutes he produces another 2 lbs. of yarn, whose value is equal to the surplus-value, created by his surplus-labour during half a day. This method of calculation serves the English manufacturer for every-day use; it shows, he will say, that in the first 8 hours, or $\frac{2}{3}$ of the working-day, he gets back the value of his cotton; and so on for the remaining hours. It is also a perfectly correct method: being in fact the first method given above with this difference, that instead of being applied to space, in which the different parts of the completed product lie side by side, it deals with time, in which those parts are successively produced. But it can also be accompanied by very barbarian notions, more especially in the heads of those who are as much interested, practically, in the process of making value beget value, as they are in misunderstanding that process theoretically. Such people may get the notion into their heads, that our spinner, for example, produces or replaces in the first 8 hours of his working-day the *value* of the cotton; in the following hour and 36 minutes the *value* of the instruments of labour worn away; in the next hour and 12 minutes the *value* of the wages; and that he devotes to the production of surplus-value for the manufacturer, only that well known "last hour." In this way

the poor spinner is made to perform the two-fold miracle not only of producing cotton, spindles, steam-engine, coal, oil, &c., at the same time that he spins with them, but also of turning one working-day into five; for, in the example we are considering, the production of the raw material and instruments of labour demands four working-days of twelve hours each, and their conversion into yarn requires another such day. That the love of lucre induces an easy belief in such miracles, and that sycophant doctrinaires are never wanting to prove them, is vouched for by the following incident of historical celebrity.

SECTION 3.

SENIOR'S "LAST HOUR"

One fine morning, in the year 1836, Nassau W. Senior, who may be called the bel-esprit of English economists, well known, alike for his economic "science," and for his beautiful style, was summoned from Oxford to Manchester, to learn in the latter place, the Political Economy that he taught in the former. The manufacturers elected him as their champion, not only against the newly passed Factory Act, but against the still more menacing Ten-hours' agitation. With their usual practical acuteness, they had found out- that the learned Professor "wanted a good deal of finishing;" it was this discovery that caused them to write for him. On his side the Professor has embodied the lecture he received from the Manchester manufacturers, in a pamphlet, entitled: "Letters on the Factory Act, as it affects the cotton manufacture." London, 1837. Here we find, amongst others, the following edifying passage: "Under the present law, no mill in which persons under 18 years of age are employed, ... can be worked more than 11 1/2 hours a day, that is 12 hours for 5 days in the week, and nine on Saturday.

"Now the following analysis (!) will show that in a mill so worked, the whole net profit is derived *from the last hour*. I will suppose a manufacturer to invest £100,000: — £80,000 in his mill and machinery, and £20,000 in raw material and wages. The annual return of that mill, supposing the capital to be turned once a year, and gross profits to be 15 per cent., ought to be goods worth £15,000.... Of this £115,000, each of the twenty-three half-hours of work produces 5-115ths or one twenty-third. Of these 23-23rds (constituting the whole £115,000) twenty, that is to say £100,000 out of the £115,000, simply replace the capital; — one twenty-third (or £5,000 out of the £115,000) makes up for the deterioration of the mill and machinery. The remaining 2-23rds, that is, the last two of the twenty-three half-hours of every day, produce the net profit of 10 per cent. If, therefore (prices

remaining the same), the factory could be kept at work thirteen hours instead of eleven and a half, with an addition of about £2,600 to the circulating capital, the net profit would be more than doubled. On the other hand, if the hours of working were reduced by one hour per day (prices remaining the same), the *net* profit would be destroyed — if they were reduced by one hour and a half, even the *gross* profit would be destroyed." [10]

And the Professor calls this an "analysis!" If, giving credence to the out-cries of the manufacturers, he believed that the workmen spend the best part of the day in the production, i.e., the reproduction or replacement of the value of the buildings, machinery, cotton, coal, &c., then his analysis was superfluous. His answer would simply have been: — Gentlemen! if you work your mills for 10 hours instead of 11 1/2, then, other things being equal, the daily consumption of cotton, machinery, &c., will decrease in proportion. You gain just as much as you lose. Your work-people will in future spend one hour and a half less time in reproducing or replacing the capital that has been advanced. — If, on the other hand, he did not believe them without further inquiry, but, as being an expert in such matters, deemed an analysis necessary, then he ought, in a question that is concerned exclusively with the relations of net profit to the length of the working-day, before all things to have asked the manufacturers, to be careful not to lump together machinery, workshops, raw material, and labour, but to be good enough to place the constant capital, invested in buildings, machinery, raw material, &c., on one side of the account, and the capital advanced in wages on the other side. If the Professor then found, that in accordance with the calculation of the manufacturers, the workman reproduced or replaced his wages in 2 half-hours, in that case, he should have continued his analysis thus:

According to your figures, the workman in the last hour but one produces his wages, and in the last hour your surplus-value or net profit. Now, since in equal periods he produces equal values, the produce of the last hour but one, must have the same value as that of the last hour. Further, it is only while he labours that he produces any value at all, and the amount of his labour is measured by his labour-time. This you say, amounts to 11 1/2 hours a day. He employs one portion of these 11 1/2 hours, in producing or replacing his wages, and the remaining portion in producing your net profit. Beyond this he does absolutely nothing. But since, on your assumption, his wages, and the surplus-value he yields, are of equal value, it is clear that he produces his wages in 5 3/4 hours, and your net profit in the other 5 3/4 hours. Again, since the value of the yarn produced in 2 hours, is equal to the sum of the values of his wages and of your net profit, the measure of the value of this yarn must be 11 1/2 working-hours, of which 5 3/4 hours measure the value of the yarn produced in the last hour but one, and 5 3/4, the value of the yarn produced in the last hour. We now come to a ticklish point; therefore, attention!

The last working-hour but one is, like the first, an ordinary working-hour, neither more nor less. How then can the spinner produce in one hour, in the shape of yarn, a value that embodies $5\frac{3}{4}$ hours' labour? The truth is that he performs no such miracle. The use-value produced by him in one hour, is a definite quantity of yarn. The value of this yarn is measured by $5\frac{3}{4}$ working-hours, of which $4\frac{3}{4}$ were, without any assistance from him, previously embodied in the means of production, in the cotton, the machinery, and so on; the remaining one hour alone is added by him. Therefore since his wages are produced in $5\frac{3}{4}$ hours, and the yarn produced in one hour also contains $5\frac{3}{4}$ hours' work, there is no witchcraft in the result, that the value created by his $5\frac{3}{4}$ hours' spinning, is equal to the value of the product spun in one hour. You are altogether on the wrong track, if you think that he loses a single moment of his working-day, in reproducing or replacing the values of the cotton, the machinery, and so on. On the contrary, it is because his labour converts the cotton and spindles into yarn, because he spins, that the values of the cotton and spindles go over to the yarn of their own accord. This result is owing to the quality of his labour, not to its quantity. It is true, he will in one hour transfer to the yarn more value, in the shape of cotton, than he will in half an hour; but that is only because in one hour he spins up more cotton than in half an hour. You see then, your assertion, that the workman produces, in the last hour but one, the value of his wages, and in the last hour your net profit, amounts to no more than this, that in the yarn produced by him in 2 working-hours, whether they are the 2 first or the 2 last hours of the working-day, in that yarn, there are incorporated $11\frac{1}{2}$ working-hours, or just a whole day's work, *i.e.*, two hours of his own work and $9\frac{1}{2}$ hours of other people's. And my assertion that, in the first $5\frac{3}{4}$ hours, he produces his wages, and in the last $5\frac{3}{4}$ hours your net profit, amounts only to this, that you pay him for the former, but not for the latter. In speaking of payment of labour, instead of payment of labour-power, I only talk your own slang. Now, gentlemen, if you compare the working-time you pay for, with that which you do not pay for, you will find that they are to one another, as half a day is to half a day; this gives a rate of 100%, and a very pretty percentage it is. Further, there is not the least doubt, that if you make you "hands" toil for 13 hours, instead of $11\frac{1}{2}$, and, as may be expected from you, treat the work done in that extra one hour and a half, as pure surplus-labour, then the latter will be increased from $5\frac{3}{4}$ hours' labour to $7\frac{1}{4}$ hours' labour, and the rate of surplus-value from 100% to $126\frac{2}{23}\%$. So that you are altogether too sanguine, in expecting that by such an addition of $1\frac{1}{2}$ hours to the working-day, the rate will rise from 100% to 200% and more, in other words that it will be "more than doubled." On the other hand-man's heart is a wonderful thing, especially when carried in the purse — you take too pessimist a view, when you fear, that with a reduction of the hours of labour from $11\frac{1}{2}$ to 10, the whole of your net profit will go to the dogs. Not at all. All other conditions remaining the same, the surplus-labour will fall from $5\frac{3}{4}$ hours to $4\frac{3}{4}$ hours, a period that still gives a very profitable rate of surplus-value, namely $82\frac{14}{23}\%$. But this dreadful

"last hour," about which you have invented more stories than have the millenarians about the day of judgment, is "all bosh." If it goes, it will cost neither you, your net profit, nor the boys and girls whom you employ, their "purity of mind." [11] Whenever your "last hour" strikes in earnest, think of the Oxford Professor. And now, gentlemen, "farewell, and may we meet again in yonder better world, but not before."

Senior invented the battle cry of the "last hour" in 1836. [12] In the *London Economist* of the 15th April, 1848, the same cry was again raised by James Wilson, an economic mandarin of high standing: this time in opposition to the 10 hours' bill.

SECTION 4. SURPLUS-PRODUCE

The portion of the product that represents the surplus-value, (one tenth of the 20 lbs., or 2 lbs. of yarn, in the example given in Sec. 2) we call "surplus-produce." Just as the rate of surplus-value is determined by its relation, not to the sum total of the capital, but to its variable part; in like manner, the relative quantity of surplus-produce is determined by the ratio that this produce bears, not to the remaining part of the total product, but to that part of it in which is incorporated the necessary labour. Since the production of surplus-value is the chief end and aim of capitalist production, it is clear, that the greatness of a man's or a nation's wealth should be measured, not by the absolute quantity produced, but by the relative magnitude of the surplus-produce. [13]

The sum of the necessary labour and the surplus-labour, i.e., of the periods of time during which the workman replaces the value of his labour-power, and produces the surplus-value, this sum constitutes the actual time during which he works, i.e., the working-day.

From: <http://www.marxists.org/archive/marx/works/1867-c1/ch09.htm>

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